Bethpage, NY – ROD issued by NYSDEC in March 2001

Public Water Supply Protection Program

The ROD issued by NYSDEC (March 2001) recognizes the importance of continued provision of potable water to those communities/populations served by water supply wells that are or that become impacted by site-related contamination. To this end, the ROD requires that a public water supply protection program be implemented. The components of this program are as follows:

- continued public water supply wellhead treatment to meet appropriate drinking water quality performance objectives at wellfields already affected by the groundwater contaminant plume for as long as these affected wellfields are used as community water supply sources;
- public water supply wellhead treatment or comparable alternative measures, as necessary, for wellfields that become affected in the future; and
- long term monitoring of the groundwater contaminant plume including outpost monitoring wells upgradient of potentially affected water supply wells.

Groundwater Remedial Program

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

Since the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program, including comprehensive monitoring of plume attenuation will be instituted. This monitoring will evaluate the effectiveness of the ONCT groundwater extraction and treatment system, monitor the levels of select inorganics (e.g., chromium and cadmium) and volatile organic compound (VOC) contaminants in the groundwater upgradient and downgradient of the ONCT system, monitor the effectiveness of the offsite component of this remedy and the wellhead treatment systems, and better define and track the offsite groundwater contaminant plume. This combined monitoring effort will allow the effectiveness of this remedy to be monitored and will be a component of the operation, maintenance and monitoring (OM&M) program for the site.

2. Continued operation of the Onsite Containment (ONCT) IRM groundwater extraction system to address the onsite TVOC groundwater contamination emanating from the former and current onsite source areas. This system must be sufficient to intercept the width and depth of the entire TVOC plume migrating from the Northrop Grumman Site.

3. A study to confirm the hydrogeologic effectiveness of the onsite containment (ONCT) system. This will, if necessary, include, but not necessarily be limited to, the installation of any required monitoring wells, piezometric measurements, a groundwater modeling effort and a hydrogeologic report, independent of any quarterly monitoring report on the ONCT system predesign study findings.

4. a. A predesign investigation to determine the optimum location(s) for the GM38 area groundwater extraction well(s). This predesign investigation will derive the data necessary to determine the screen zone of the extraction well(s). In addition, the number of extraction wells will be substantiated and the potential need to cluster these wells will be determined.
b. The installation of at least one groundwater extraction well, or comparable remedial technology, at the approximate location of the GM38 area, depicted on Figure 7 and as detailed in the Northrop Grumman OU2 FS, with all necessary piping to install the wells and properly run the discharge to the groundwater treatment systems.
c. Utilization an existing storm water collection and groundwater recharge system for discharge
of treated groundwater. If one is not available, then a suitable method of system discharge and
groundwater recharge will be developed.
d. The installation of the necessary air stripping systems or comparable remedial technology
designed to remove VOCs from all the extracted groundwater to meet the State Pollutant Discharge Elimination System (SPDES) discharge limitations.
5. The installation of air emission controls, if required, to comply with the NYSDEC air regulations.
6. The long-term operation, maintenance and monitoring (OM&M) of the ONCT and GM-38 area
extraction well(s). Monitoring will include the installation and use of upgradient and downgradient
groundwater shallow, intermediate, deep and very deep monitoring wells. Testing will be done,
at a minimum, on a quarterly basis unless otherwise approved by the NYSDEC, to verify the
system performance. Additionally, monitoring of groundwater elevations will be done, initially on
a quarterly basis (unless otherwise approved by the NYSDEC) to determine the groundwater
capture zone in different seasons, and annually thereafter.
7. A specific investigative task will include current work and potentially include, but is not necessarily
limited to, installation of additional groundwater monitoring wells, vertical profile borings (VPBs),
and groundwater sampling to determine if there are any other areas of elevated groundwater

contamination that warrant additional remediation under OU2 and/or creation of an Operable Unit
3. This task, which includes the recent and ongoing installation of VPBs, will be documented in
a report to the NYSDEC. The NYSDEC will then, based on the report, make a final determination.
8. The formation of a technical advisory committee (TAC) as deemed necessary by the NYSDEC,
to be comprised at a minimum, of the involved Agencies, participating local water districts,
Northrop Grumman and the Department of the Navy. The main purpose is to review and provide
input on all materials relating to the implementation of the Northrop Grumman and NWIRP OU2
Groundwater Remedial Program and Public Water Supply Protection Program.

Public Water Supply Protection Program

9. The installation and/or quarterly monitoring for VOCs of outpost monitoring wells installed with
respect to potentially affected public and private water supply wells, including BWD well fields
4, 5 and 6. The remedial design will evaluate and determine the best locations for any additional
outpost wells required for this program. Outpost monitoring wells will be sampled quarterly.
10. A public water supply contingency plan for the design, construction, operation and maintenance
of wellhead treatment systems and/or the evaluation of comparable alternative measures, if
necessary. If evaluation of the long term groundwater monitoring or the outpost well data indicates

that a public supply well has been or is in imminent danger of being impacted by Northrop
Grumman/NWIRP site-related contaminants, then wellhead treatment or comparable alternative
measure(s) for the impacted public water supply well(s) will be necessary. This determination will
be made by NYSDEC, NYSDOH, and the Nassau County Department of Health in conjunction
with the potentially impacted water district. The treatment system or comparable alternative
measure(s) to produce potable water will be designed and constructed with input from the affected
water district. Alternatively, if Northrop Grumman/NWIRP reaches a cash settlement with an affected Water District, then each settling District will be responsible for its respective monitoring and implementation of, as necessary, wellhead treatment, or

comparable alternative measures. Operation and maintenance of all public supply well treatment systems, or comparable alternative measures, will be assumed, at a minimum, to operate for the required 30 year time frame as required by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). At a minimum, the NYSDOH Part 5 drinking water standards will always be met.
Northrop Grumman and the Department of the Navy have agreed to establish a goal for any given wellhead treatment or comparable technology for affected drinking water supplies which will provide water that is non-detect using USEPA Method 502.2 to a detection limit of 0.5 micrograms per liter (ug/l) with respect to VOCs for site related contamination as cited in the 2001 Water Quality Monitoring Requirements for Nassau County Public Water Systems.
11. a. Any repeated detection of 1 ppb or more of Northrop Grumman/NWIRP Site-related contamination in the outpost or long term groundwater monitoring wells upgradient of a public supply well will "trigger" Northrop Grumman or the Department of the Navy to notify the NYSDEC and the potentially impacted water district and to evaluate the rate of movement of the Northrop Grumman/NWIRP contaminants towards the public supply wells.
b. If VOC concentrations in the outpost well(s) approach or exceed a predetermined, outpost well-specific action level, a minimum of one and a maximum of three confirmatory samples will be collected within 30 days and the results evaluated by the NYSDEC and the State and County Health Departments with input from the affected water district(s). If the NYSDEC's and the Health Departments' evaluation indicates that treatment is necessary, the design and construction phase of the water treatment system(s) or comparable alternative measure will begin.
12. The BWD public supply wells and any other supply wells determined to be impacted or potentially impacted based on the long term OM&M, would be sampled on a monthly basis for total volatile organic compounds.
13. The provision of public water to residential or commercial structures that have private drinking water wells determined to be affected or potentially affected by the offsite migration of the Northrop Grumman and NWIRP groundwater plume(s).

Elements Common to Both Programs
14. A long term operation, maintenance and monitoring plan will be prepared that details all of the specific operation and maintenance of the ONCT and the GM 38 area systems and all the monitoring requirements and contingency aspects of this project.
15. A performance evaluation conducted at least once a year to determine whether the remedial goals and performance objectives of all systems have been or can be achieved, and whether the monitoring should continue.
16. A plan to properly close all monitoring wells associated with the Northrop Grumman and NWIRP sites at such time that the wells are no longer necessary.

Responsiveness Summary
Question No. 13: My main concern is the offsite contamination, the tremendous area of contamination, and what is being done. I heard tonight about wells on Central Avenue,

but it is my understanding, from having read quite a bit on the site, that this contamination is falling south of Hempstead Turnpike. That's quite an area. What is being done in that area, anything?

Response No. 13: As groundwater in the Upper Glacial and Magothy aquifers moves towards those areas south of Hempstead Turnpike, the concentrations drop off dramatically compared to what they are in onsite groundwater. The FS evaluated full containment of all of the groundwater contamination associated with the site, but found that it was technically infeasible. Although NYSDEC's goal is to restore the site to pre-disposal conditions to the extent feasible and authorized by law, this goal is very difficult to achieve. The Navy is conducting additional investigation south of the Hempstead Turnpike to better determine the extent of contamination in that area and to place outpost monitoring wells upgradient of potentially affected water supply wells.

Question No. 14: Could you give me, for instance, what I'm trying to get for some of the people here, rather than say 3,000 feet wide, could you tell me like there's an area of contamination from Wantagh Avenue to past the high school? Could you tell me where the plume exists?

Response No. 14: The contaminant plume is roughly bounded by Cherry Avenue to the North, the Oyster Bay Expressway to the East, New South Road and Massapequa-Hicksville Road /Route 107 to the West, and some point South of the Hempstead Turnpike. It was already known that the projected edge of the groundwater plume was approaching Hempstead Turnpike from the information detailed in remedial investigation reports. Therefore, the NYSDEC directed Northrop Grumman and the Navy to install a number of off-site monitoring wells to begin looking further down gradient, south of Hempstead Turnpike.

The Navy took the lead on this portion of the project and began with the installation of groundwater profiles. They went to areas thought to be the end of the plume. However, this current data generated by the Navy indicated contamination has gone beyond Hempstead Turnpike. In response to this, the Navy agreed to install additional borings to delineate the leading edge and locate outpost monitoring wells before the Record of Decision is signed.

In terms of contaminant mass, approximately 75 percent of volatile organic contamination is still underneath the two sites. The volatile organic concentrations down gradient are, for the most part, an order of magnitude lower, with the exception of the highly elevated concentrations around monitoring well GM-38-D2.